

Flight Scientist Report
Wednesday 01/12/2022 ACTIVATE RF103

Flight Type: Statistical Survey Flight

Flight Route: ATLIC ZIBUT 365654N722526W 341803N713912W 365654N722526W ZIBUT
ATLIC

Special Notes: This is an excellent flight day with this being the 2nd of two flights to characterize the cloud field a day after a CAO event. There is a CALIPSO overpass this flight, which is why the heading is more to the south of ZIBUT as compared to the 1st flight this day.

King Air

Pilot report (Jamison):

Second (afternoon) of two cooperative flights with HU-25; this flight was coordinated to coincide with Callypso overflight. Route of flight: KLFJ-ATLIC-ZIBUT-3657N07225W-3418N07139W-3657N07225W-ZIBUT-ATLIC-TURET-KLFJ. Weather clear with winds out of the west at 10 knots for KLFJ departure. Uneventful climb with no undue delays from departure control; continued uninterrupted climb to FL280 and turn through north back towards ATLIC. Positioning with HU-25 was maintained within 10 minutes through duration of science collection. Conditions at altitude were smooth air and clear the entire routing. Established on southeast outbound leg after ZIBUT approximately 12 minutes prior to Callypso overflight. Just prior to turn/reverse point, ground researchers called for request to extend southeast leg an additional 5 minutes. Coordinated with ATC to change turn point to 33.54N071.32W (approximately 5 minutes/20nm extended on preplanned leg). 5x dropsondes deployed; ZIBUT, 2 at revised turn/reverse point (1st one indicated GPS transmit failure shortly after deploying), half way between turn point and ZIBUT, and at ATLIC prior to descent. Maintained FL280 until final dropsonde release at ATLIC then immediately commenced 2500 fpm descent to achieve 12,000 ft altitude at TURET. Uneventful recovery to runway 26 at KLFJ.

Flight scientist report (Harper):

Takeoff: 18:00:57utc

Cloud conditions:

Very thin cirrus on outbound leg. Cirrus clearing after ZIBUT

B200/HU25 coordination:

Outbound leg: B200 trailing less than 2min

Inbound NW leg: B200 trailing by 10min.

Inbound W leg: B200 trailing by 2min

CALIPSO overpass at 19:00utc

Sonde 1: 18:48:05utc. past ZIBUT at SE turn.

Sonde 2: 19:33:46utc at Turnaround. GPS lock lost immediate after launch.

Sonde 3: 19:41:05utc soon after turnaround due to GPS lock loss for previous sonde.

Sonde 4: 20:18:48utc at westbound turn. Turned early to follow HU25 that turned early for fuel concerns.

Sonde 5: 20:58:45utc at ATLIC

Landing: 21:20utc

Instrument Status

HSRL2: no issues

AVAPS: no issues - 2nd sonde lost GPS lock

RSP: no issues

Satcom: no connection throughout 1st half of flight

Nadir camera: inop for this flight

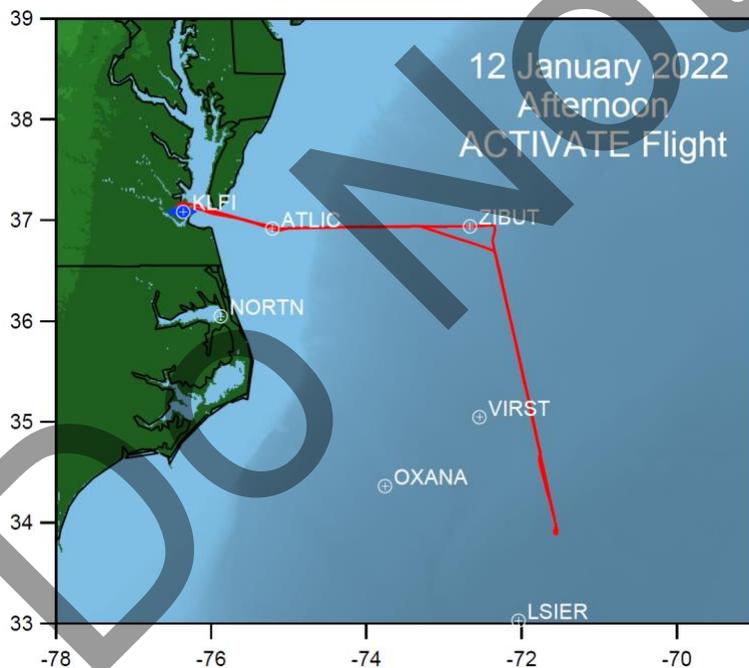
Falcon

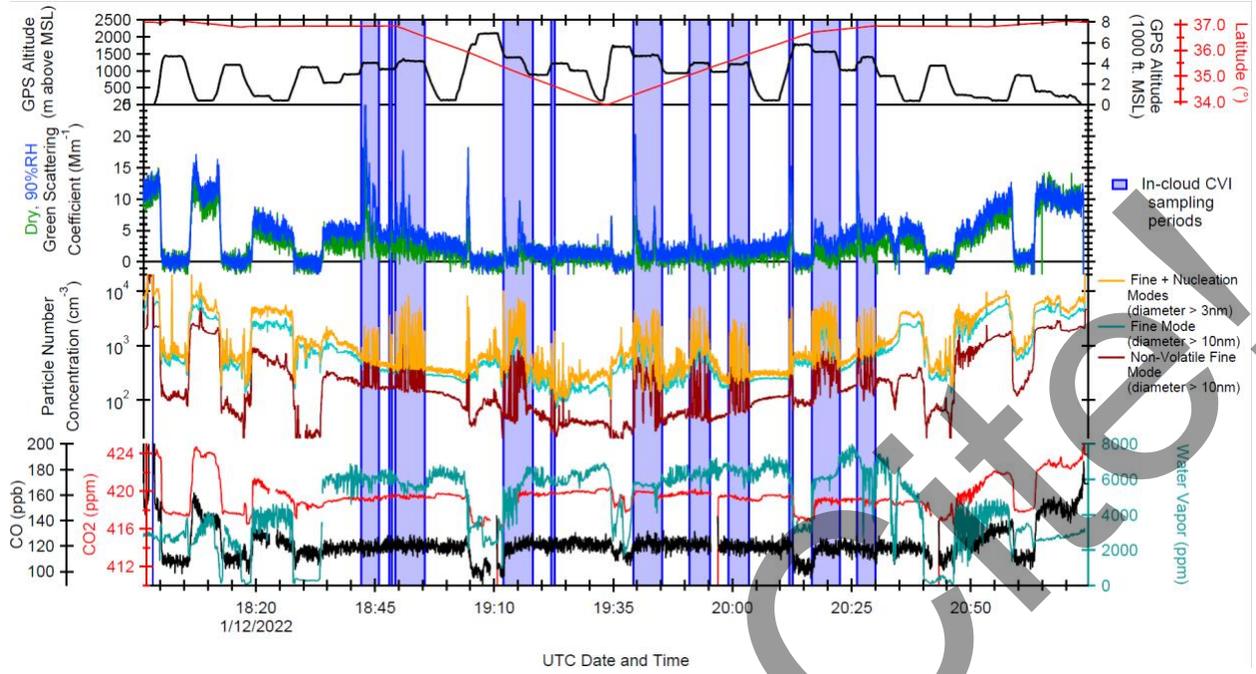
Pilot report (Baxley):

KLIF-ATLIC-ZIBUT-3657N07225W-3418N07139W-3657N07225W-ZIBUT-ATLIC-KLFI Thorson, Baxley, Crosbie, Winstead Weather same as first sortie and as expected. Waypoint added inflight to extend flight path 5 minutes further south (3354.80N07132.40W). No issues noted.

Flight scientist report (Crosbie):

3 Cloudy Modules, 1 part cloudy, 4 Clear Modules. Similar conditions to the morning flight in that clear conditions were flown to the GS then cloudy thereafter. A change in the direction of the sampling during the cloudy region was done to coordinate with a CALIPSO overpass. The clouds near ZIBUT were similar on the outbound but towards the end point, there was less precipitation observed compared to the morning. Near the end point, the clouds started to take on a slightly more complex appearance with a thin stratiform shield becoming more extensive near the cloud top while the lower portion of the clouds remained similar. It was noted that more humid conditions were observed in the above cloud environment than the morning and certainly it was more humid above cloud compared to the above boundary layer conditions in the clear region although the altitudes were not consistent. A similar decrease in Nd was observed between ZIBUT and the end point. A similar aerosol gradient was observed to the morning except that the gradient had moved further to the east.



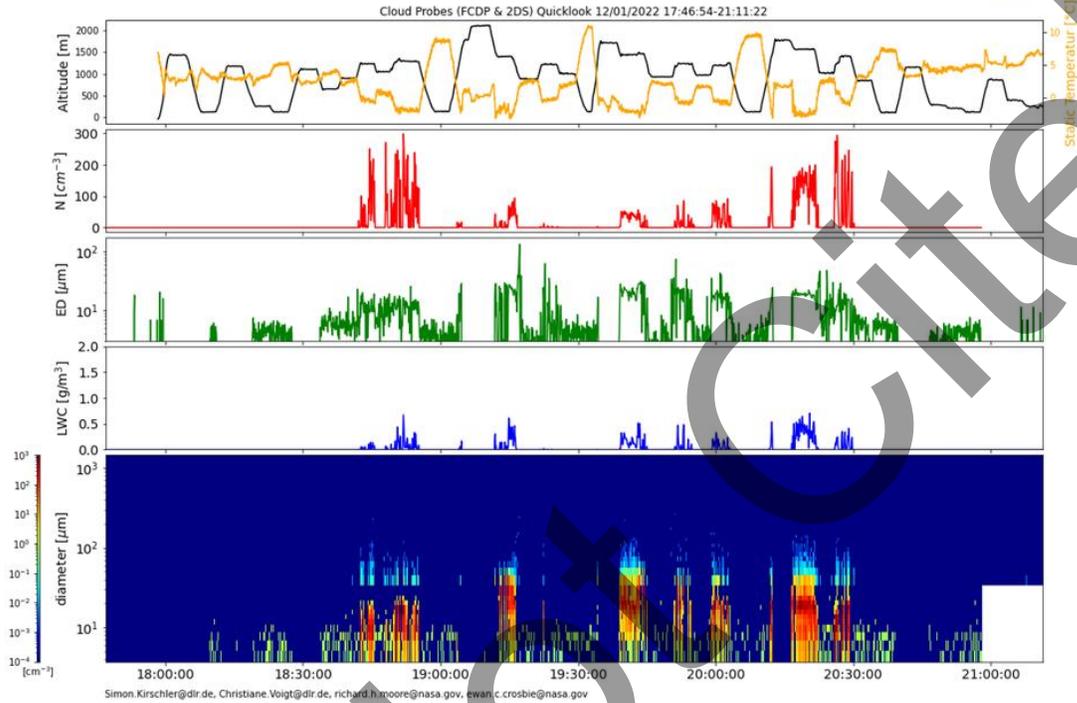


Do Not

Quicklook ACTIVATE Cloud Probes (FCDP & 2DS) Quicklook

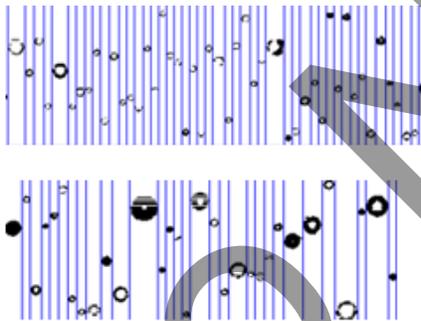
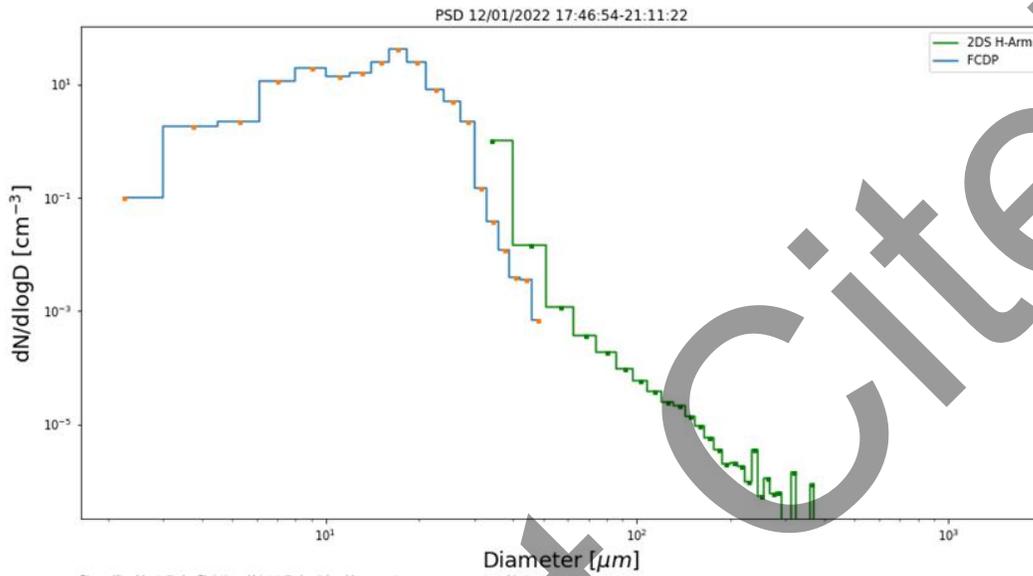
preliminary data, only for quicklook use

Simon Kirschler, Christiane Voigt, Richard Moore, Ewan Crosbie



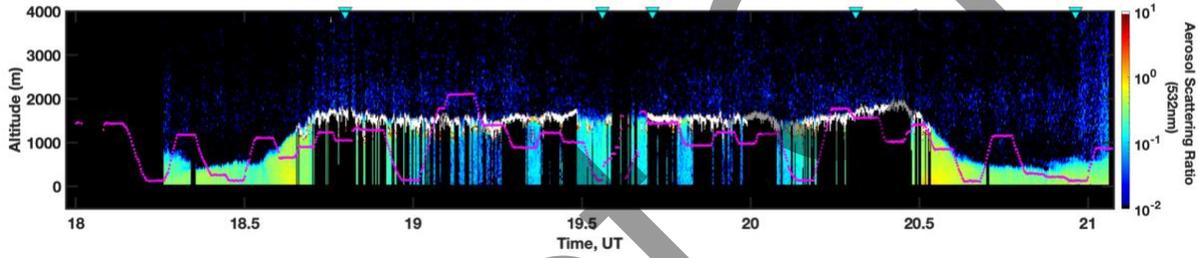
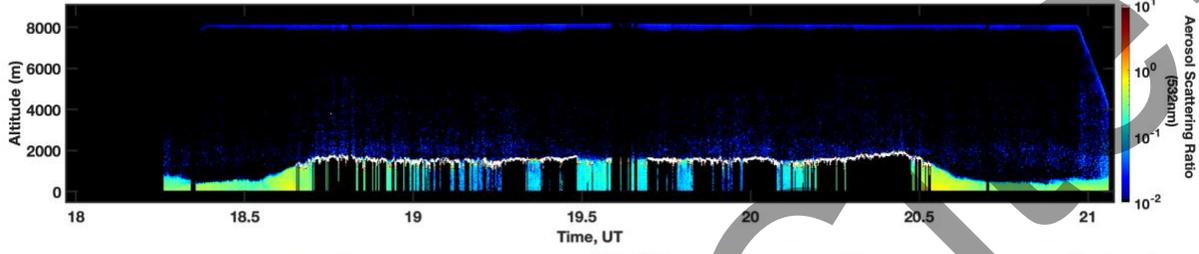
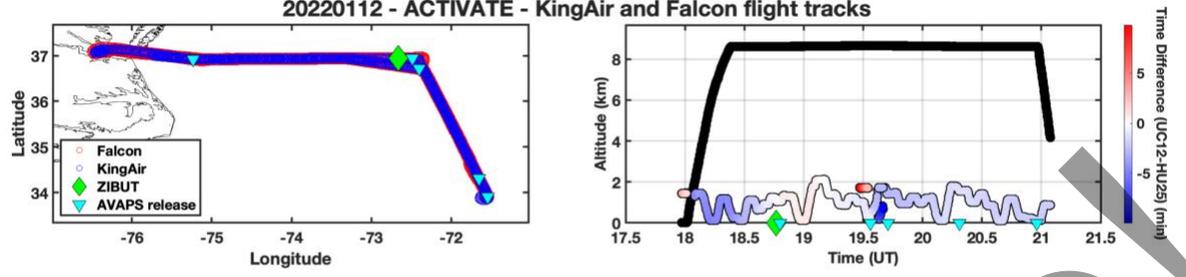
PSD ACTIVATE

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Only liquid cloud with drizzle and
no large precip.

20220112 - ACTIVATE - KingAir and Falcon flight tracks

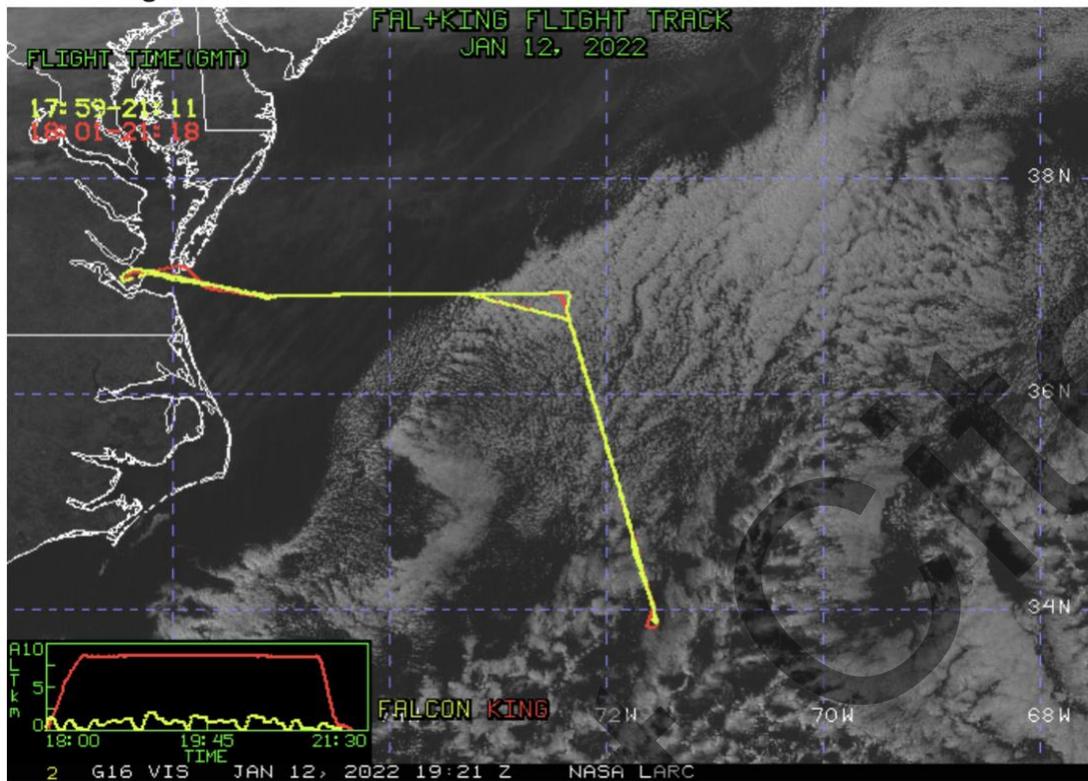


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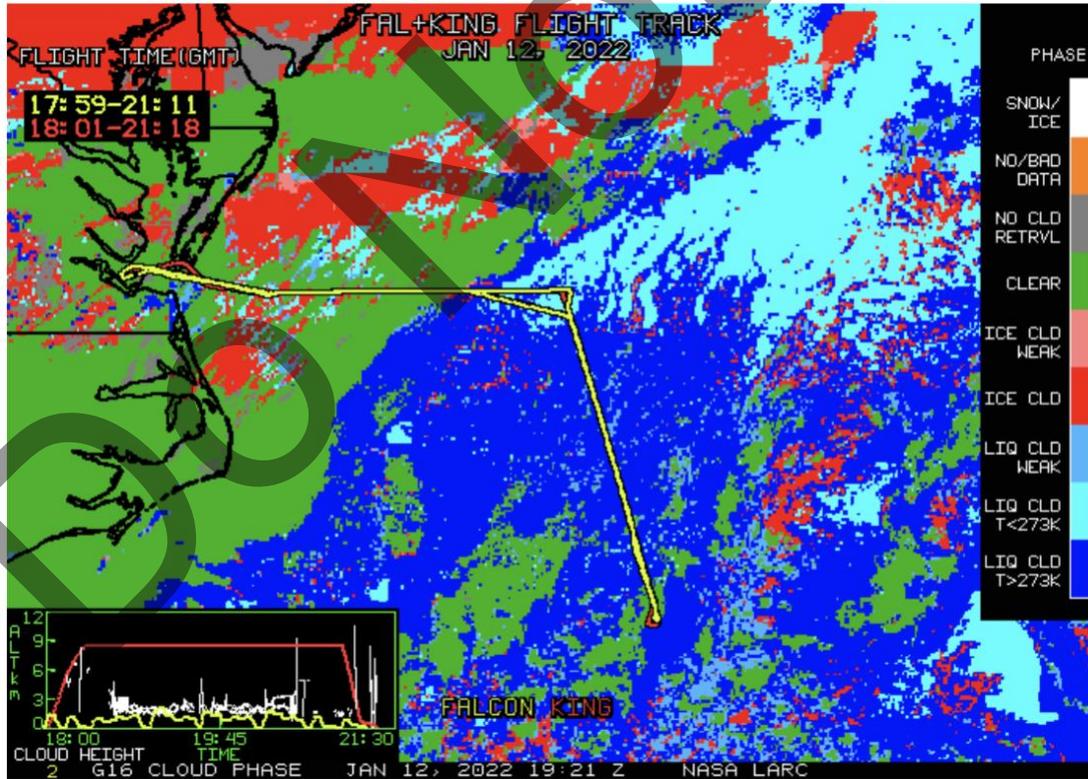
NASA-LaRC Clouds Group GOES-16 Quicklook Images for Flight 103, 19:21 UTC Jan 12, 2022

Do Not Cite!

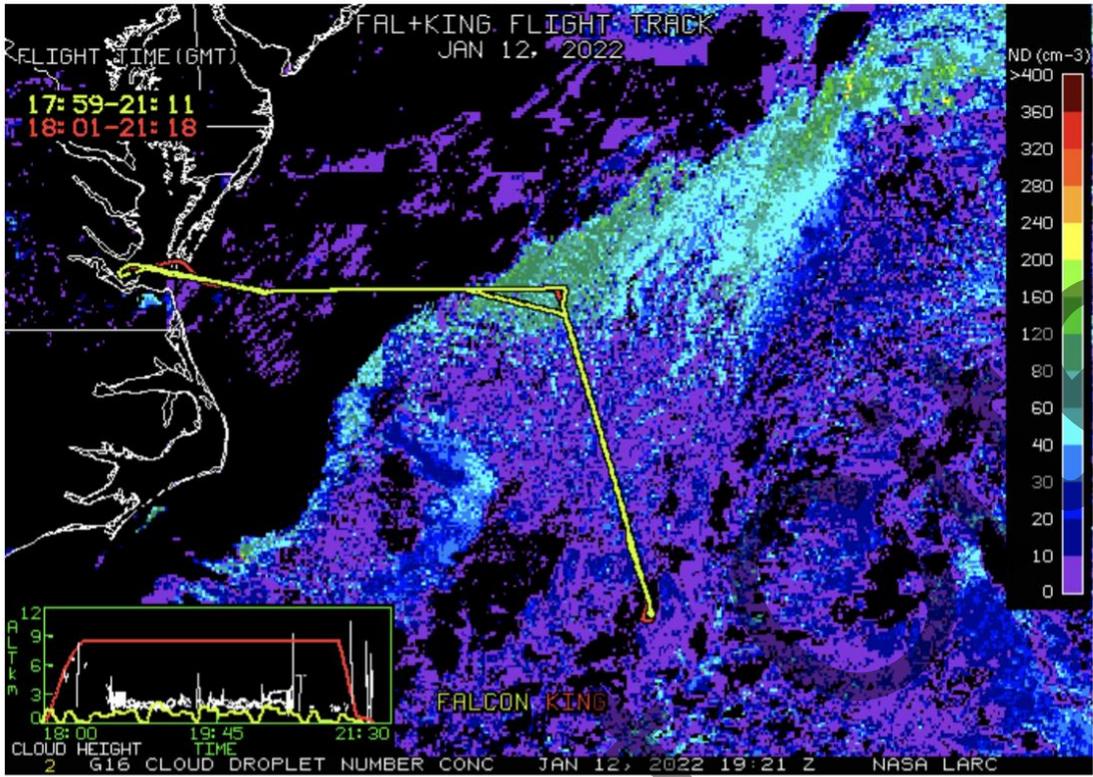
Visible Image



Cloud Phase



Cloud Droplet Number Concentration (cm-3)



Cloud-Top Height (Kft-ASL)

